

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

ROBINSON, Nigel, Alexander, Julian
D Young & Co.
21 New Fetter Lane
London EC4A 1DA
ROYAUME-UNIDate of mailing (day/month/year)
28 August 2001 (28.08.01)Applicant's or agent's file reference
P006192WO

IMPORTANT NOTIFICATION

International application No.
PCT/GB00/00560International filing date (day/month/year)
17 February 2000 (17.02.00)

1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

Name and Address

ARGO INTERACTIVE LIMITED
7 Dukes Court
Chichester
West Sussex PO19 2FX
United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☐ the name ☒ the address ☐ the nationality ☐ the residence

Name and Address

ARGO INTERACTIVE LIMITED
Oak House
Shackleford Road
Elstead
Surrey GU8 6LB
United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned
☐ the International Searching Authority ☒ the elected Offices concerned
☐ the International Preliminary Examining Authority ☐ other:The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Anman QIU

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C. 20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 06 September 2000 (06.09.00)	
International application No. PCT/GB00/00560	Applicant's or agent's file reference P006192WO
International filing date (day/month/year) 17 February 2000 (17.02.00)	Priority date (day/month/year) 17 February 1999 (17.02.99)
Applicant JELBERT, Richard et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
 18 August 2000 (18.08.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Juan Cruz Telephone No.: (41-22) 338.83.38
---	---

PCT

REC'D 10 MAY 2001

WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P006192WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/00560	International filing date (day/month/year) 17/02/2000	Priority date (day/month/year) 17/02/1999
International Patent Classification (IPC) or national classification and IPC H04L12/58		
Applicant ARGO INTERACTIVE LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 13 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 18/08/2000	Date of completion of this report 08.05.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Lebas, Y Telephone No. +49 89 2399 8980 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/00560

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-6,8-29	as originally filed			
7,30-36	as received on	16/03/2001	with letter of	16/03/2001

Claims, No.:

1-20	as received on	16/03/2001	with letter of	16/03/2001
------	----------------	------------	----------------	------------

Drawings, sheets:

1/6-6/6	as originally filed
---------	---------------------

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/00560

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-20
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-20
Industrial applicability (IA)	Yes:	Claims	1-20
	No:	Claims	

2. Citations and explanations
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/00560

Cited Documents:

- D1: WO 99 06929 A (AT & T CORP) 11 February 1999 (1999-02-11)
D2: PALME J ET AL: 'Issues when designing filters in messaging systems'
COMPUTER COMMUNICATIONS,NL,ELSEVIER SCIENCE PUBLISHERS
BV, AMSTERDAM, vol. 19, no. 2, 1 February 1996 (1996-02-01), pages 95-
101, XP004032392 ISSN: 0140-3664

From the available prior art, the subject matter of D1 is considered to represent the closest to that of the present application.

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1a. According to features of claim 1, D1 discloses:

an apparatus for processing electronic mail (D1, Figure 2: email proxy), said apparatus comprising:

mail fetching logic for fetching an electronic mail message for a user from a first mail server , said apparatus interacting as a first mail client with said first mail server ("POP3 proxy getter 36" of email proxy in D1, Figure 2; see also D1, page 9, lines 1-5 and 19-22, and page 3, lines 5-7);

mail filtering logic for identifying at least one predetermined characteristic within said electronic mail message that is indicative of said mail message being unwanted by said user so as to identify said electronic mail message as either a wanted electronic mail message or an unwanted electronic mail message ("controller 31" in D1, Figure 2; see also D1, page 5, lines 1-2, page 9, lines 23-25 and page 11, lines 15-20);

mail storage for storing at least wanted electronic mail messages identified by said mail filtering logic ("deliver queue 44" in D1, Figure 2; see also D1, page 11, lines 15-20); and

mail delivery logic responsive to a mail delivery request from a second mail client for delivering wanted mail for said user from said mail storage to said second mail client, said apparatus interacting as a second mail server with said second mail client ("POP3 proxy server 34" in D1, Figure 2; see also D1, page 9, lines 19-26).

- 1b. Claim 1 differs from the disclosure of D1 in that:
- a) unwanted electronic mail messages are also stored within said mail storage;
 - b) the apparatus also comprises unwanted mail delivery logic responsive to an unwanted mail request from a user for delivering to said user unwanted electronic mail messages held within said mail storage for said user.

These features of D1 are however generally known in the art of message filtering, as shown for instance in D2 (page 96, left-hand column, lines 3-5), where it is said that filtered electronic mail messages could, instead of being directly discarded, be stored for reference (ie available upon user's request) in a separate file, and not shown to the user as a new message.

The skilled person, therefore, being aware of the disclosure of D1, can apply common general knowledge of the art (D2) and arrive at the apparatus of claim 1.

Claim 1 therefore does not involve an inventive step (Article 33(3) PCT).

2. Independent claim 17 is a claim for a method corresponding to the apparatus of claim 1.

The arguments set out for the subject-matter of claim 1 (see points 1a and 1b above) also apply to the subject-matter of claim 17.

Therefore, as for claim 1, the subject-matter of independent claim 17 does not involve an inventive step (Article 33(3) PCT - see point 1b above).

3. Independent claim 18, is a claim for an apparatus comprising:
- a) a mail delivery request generator; and
 - b) an apparatus as claimed in any one of claims 1-16.

However, as the apparatus claimed in claims 1-16 already comprises a mail

delivery request generator for generating a mail delivery request to a mail server ("mail fetching logic for fetching an electronic mail message for a user from a first mail server, said apparatus interacting as a first mail client with said first mail server" in claim 1), the combination of features (a) and (b) do not provide any additional subject-matter over the disclosures of claims 1-16.

Therefore, as for claims 1-16, claim 18 does not involve an inventive step (Article 33(3) PCT).

4. Independent claim 20, as far as its clarity allowed it to be understood (see Re Item VIII), is a claim for a computer program corresponding to the apparatus of claim 1. The arguments set out for the subject-matter of claim 1 (see points 1a and 1b above) also apply to the subject-matter of claim 20.

Therefore, as for claim 1, the subject-matter of independent claim 20 does not involve an inventive step (Article 33(3) PCT - see point 1b above).

5. The additional features of dependent claims 2-16 and 19, as far as their clarity allowed them to be understood (see Re Item VIII), add nothing of inventive significance to respectively claims 1 and 18, being either features rendered obvious by document D1, or features readily apparent to a skilled person based on his common general knowledge of the art (Article 33(1)-(3) PCT).

Re Item VIII

Certain observations on the international application

1. Claims 1-2, 4, 13-14 and 16 are claims for an apparatus, but include features formulated in the following manner:

"electronic mail messages are also stored within mail storage..." (claim 1);

"mail filtering logic identifies..." (claim 2);

"mail filtering logic applies" (claim 4);

"mail storage operates to delete" (claim 13);

"mail filtering logic uses" (claims 14 and 16).

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/00560

Such features are considered to define both apparatus features and actions carried out by said features, which can be interpreted as steps of a method. As such the scope of said claims 1-2, 4, 13-14 and 16 lacks clarity with regard to their category (Article 6 PCT).

All such features should have be formulated in the form:

"mail storage is adapted to store electronic mail messages..." (claim 1);

"mail filtering logic is adapted to identify..." (claim 2);

"mail filtering logic is adapted to apply" (claim 4);

"mail storage is adapted to delete" (claim 13);

"mail filtering logic is adapted to use" (claims 14 and 16).

2. Dependent claim 13 lacks clarity (Article 6 PCT) since "unwanted mail storage logic" lacks antecedent definition.
3. In claim 20, page 41, line 7, "said mail storage is operable to..." should apparently have been replaced by "said mail storage logic is operable to..."

5 their "From:" or "Subject:" fields, or within their body text. The principal problem with this approach is that junk email tends not to have a consistent set of characteristics within this scope which can readily be matched by a filter; this results in the recipient having to constantly define and refine filters to trap emails of specific character while also trying to minimise the risk of inadvertently trapping a non-junk email.

10 An alternative approach is described by European Patent Application EP-A-0,813,162, where a user can determine whether or not a given message is junk and, if so, inform a mail server of the fact so that the message can be removed from the mailboxes of other users who make use of the same mailserver.

15 Viewed from one aspect the present invention provides apparatus for processing electronic mail, said apparatus comprising:

mail fetching logic for fetching an electronic mail message for a user from a first mail server, said apparatus interacting as a first mail client with said first mail server;

20 mail filtering logic for identifying at least one predetermined characteristic within said electronic mail message that is indicative of said mail message being unwanted by said user so as to identify said electronic mail message as either a wanted electronic mail message or an unwanted electronic mail message;

mail storage for storing at least wanted electronic mail messages identified by said mail
25 filtering logic; and

mail delivery logic responsive to a mail delivery request from a second mail client for delivering wanted mail for said user from said mail storage to said second mail client, said apparatus interacting as a second mail server with said second mail client.

30 Transmission of the electronic mail between the client and the server may use one of several known mail transport protocol known in the prior art. Preferred embodiments of the invention uses the POP3 protocol (rather than a protocol such as IMAP, although IMAP could be employed) between the end-client and the main server, since the use of POP3 enables the invention to be added to a pre-existing system without any change having to be made to the

**REPLACED BY
ART 34 AMDT**

5 Various aspects of at least preferred embodiments of the invention are set out in the following clauses:

10 **Clause 1.** A computer controlled method for processing electronic mail (email) comprising the steps of:

- 15 (a) extracting email from a plurality of known email servers into a separate computer apparatus (comprising a central processing unit, a memory, a file storage mechanism and one or more network interfaces) or a software system resident and executing on the known email server;
- (b) employing various computer controlled methods to determine whether a given email message is likely to constitute junk;
- 20 (c) delivering the characterised mail to either the principal mailbox of the intended recipient or, if the characterisation of the message indicates that it is likely to constitute junk, to a deferred mailbox for that recipient;
- (d) providing an interactive mechanism for a user to access and examine individual messages in his deferred mailbox;
- (e) providing an interactive mechanism for a user to manually classify a message within his deferred mailbox as junk email;
- 25 (f) preventing presentation of messages automatically or manually classified as junk email to other users of the apparatus or system.

30 **Clause 2.** The computer controlled methods of clause 1, part (b), where a message may be characterised by:

- (a) matching header and / or body text in each message against criteria set in particular configuration files ("killfiles") by the system administrator and / or the intended

- 5 recipient of the message, and either deleting the message or passing it to step (b) below dependent upon a match;
- (b) passing each message which remains undeleted by the processes in step (a) above to a set of scoring metrics, to obtain a characterisation of each message indicating the likelihood of the message comprising junk;
- 10 (c) recording specific characteristics of each message in a database such that records of receipt of multiple copies of the same message can be used by the scoring metrics in step (b).

Clause 3. The structuring of the scoring metrics in clause 2, part (b) to comprise a
15 modular and extensible suite for message scoring, such that each metric returns a numerical result indicating the likelihood that a given message comprises junk.

Clause 4. The computer performed multiplicative weighting applied to the numerical
result returned by each scoring metric in clause 3, according to a file generated and maintained
20 by the system administrator and which reflects his confidence in each metric to reliably isolate junk email from useful email, and the summing of the weighted results to produce a single characterisation metric for each message.

Clause 5. A computer controlled scoring metric forming part of the suite in clause 2,
25 part (b), that determines whether a message is likely to constitute spam by decomposing the message header and checking:

- (a) the validity of all IP addresses in the header;
- (b) whether the "Received:" fields constitute a contiguous block of fields or whether they
30 are disjoint;
- (c) whether each "Received:" field relates appropriately to its immediately neighbouring "Received:" fields (ie whether each field indicates receipt of the message from the server which added the "Received:" field immediately below it).

5 **Clause 6.** A computer controlled scoring metric forming part of the suite in clause 2, part (b), that determines whether a message is likely to constitute spam by testing the validity of the email address of the apparent sender.

Clause 7. The computer controlled method of testing the validity of an email address to be used by the metric of clause 6, and comprising:

10

- (a) extraction of the domain component of the email address of the apparent sender;
- (b) lookup of the MX records in the domain name service for that domain;
- (c) enumeration of the machines in that domain which are marked as having email forwardable to them;
- 15 (d) querying in turn of each host in the enumerated list for the existence of a user with username equal to the user component of the email address of the apparent sender, until either the sender is found or all hosts in the list have been queried;
- (e) if all hosts in the list have been queried and none of them have confirmed existence of the apparent message sender as a user, composing a test message to the apparent sender
- 20 and performing a "send preparation" negotiation with the first host in the list.

Clause 8. The allocation of two mailboxes to each user, where messages considered to be useful are delivered to one mailbox (denoted as the "main" mailbox) and messages that are suspected to comprise junk, following computer-performed classification by the computer controlled systems of clause 1 part (b) are delivered to the other mailbox (denoted as the "deferred" mailbox), as disclosed in clause 1 part (c).

30 **Clause 9.** The computer controlled method of presentation of the contents of the deferred mailbox to its owning user as disclosed in clause 1 part (d), such that each message therein may be examined and optionally classified by the user as junk.

Clause 10. The computer controlled method of notification by which the server hosting the deferred mailbox of clause 9 may be informed by the user that a message within his deferred mailbox constitutes junk.

5

Clause 11. The use of a World Wide Web interface to present a computer controlled interactive digest of email messages contained within the deferred mailbox as in clause 9, and to implement the notification mechanism of clause 10 by encoding notification details within a URL to be passed to a CGI script executing on the apparatus of clause 1 part (a).

10

Clause 12. The computer controlled method of clause 1 part (f) of deleting a message manually classified as junk according to the computer controlled methods of clauses 9, 10 and 11.

15

Clause 13. A computer controlled method for automatically connecting to and downloading all pending email from a plurality of remote mail servers for all registered users of an apparatus (comprising a central processor unit, a memory, a file storage mechanism and one or more network interfaces), and filing the email according to intended recipient in appropriate mailboxes stored on the apparatus in a non-interactive batch process, such that the apparatus

20

functions as an email proxy server.

Clause 14. A computer controlled method of indexing received email for the purpose of determining its likelihood to constitute junk, by storing salient properties of each message in a database as the message is received for use by the suite of scoring metrics disclosed in clauses 3, 5, 6 and 7.

25

Clause 15. An electronic mail (email) and World Wide Web system having a central processor unit, a memory, a file storage mechanism and one or more network interfaces, said system comprising:

30

- (a) an email client mechanism and an email server mechanism, these mechanisms functioning in concert to provide an email proxy service;
- (b) a set of mechanisms whereby a given email message may be examined automatically to determine whether it should be classified as likely to constitute junk;

- 5 (c) a message filing mechanism such that messages classified as likely to constitute junk and destined for a particular user are filed separately from messages classified as useful and destined for that user;
- (d) a World Wide Web presentation mechanism configured to interactively present email messages classified as likely to constitute junk for inspection by their intended recipient;
- 10 (e) a classification mechanism configured to allow the intended recipient of a message to classify said message;
- (f) a presentation prevention mechanism configured to prevent presentation of messages formally classified as junk to registered users of the system.

Clause 16. The system of clause 15, whereby the classification mechanism of part (e) is further configured to notify the system of manual junk email classification by submitting a URL to a CGI script.

Clause 17. The system of clause 15, whereby the classification mechanism of clause 16
20 includes an identifying characteristic of the junk email message.

Clause 18. The system of clause 15, whereby the mechanisms of examining email include implementations of the methods described in clauses 2, 3, 4, 5, 6 and 7, and subsequent recording of the results of examination according to clause 14.

Clause 19. The system of clause 15, whereby the presentation prevention mechanism further comprises a deletion mechanism configured to delete all instances of a message having an identifying characteristic passed to it by the method of clause 16 from all the deferred mailboxes stored on the system.

30

Clause 20. An electronic mail (email) apparatus configured to gather, process and proxy serve electronic mail messages, said apparatus having a central processor unit, a memory, a file storage mechanism and one or more network interfaces, said apparatus comprising a message classifying, sorting and filing mechanism and a presentation prevention mechanism configured

5 to prevent presentation of an email message to one or more registered users of the apparatus.

Clause 21. A signal for causing an electronic mail (email) apparatus to process electronic mail messages, said apparatus having a central processor unit, a memory, a file storage mechanism and one or more network interfaces, the signal causing the apparatus to implement a message sorting and filing mechanism and a presentation mechanism configured to prevent
10 presentation of an email message to one or more registered users of the apparatus.

Clause 22. A method of storing data on a recording medium, the method comprising storing data representative of a signal, that causes an electronic mail (email) apparatus to gather,
15 process and proxy serve electronic mail messages, said apparatus having a central processor unit, a memory, a file storage mechanism and one or more network interfaces; the signal causing the apparatus to implement a message sorting and filtering mechanism and a presentation mechanism configured to prevent presentation of an email message to one or more registered users of the apparatus.

20 **Clause 23.** The email apparatus of clause 20, the signal of clause 21 or the method of clause 22 whereby said presentation prevention mechanism further comprises a World Wide Web server and CGI script set configured to receive a URL.

25 **Clause 24.** The email apparatus, signal or method of clause 23 whereby said URL includes an identifying characteristic and said presentation prevention mechanism further comprises an email deletion system configured to dispose of said email message having said identifying characteristic.

30 **Clause 25.** The email apparatus, signal or method of clause 24 whereby said email deletion mechanism further comprises an email removal mechanism configured to scan a mailbox to dispose of said email message.

Clause 26. A computer program product comprising:

- 5
- (a) a computer usable storage medium having computer readable code embodied therein for causing a computer to gather, process and proxy serve electronic mail messages, said computer readable code comprising:
- 10 (b) computer readable code devices to cause said computer to gather, classify, sort, file and present email messages, and to effect a presentation prevention mechanism to prevent presentation of an email message to registered users of the computer.

Clause 27. The computer program product of clause 26, whereby said classification mechanisms comprise computer readable code devices configured to cause said computer to implement message scoring metrics disclosed in clauses 3, 5, 6 and 7, and subsequent storage of the results of classification according to clause 14.

20 **Clause 28.** The computer program product of clause 26, whereby said presentation prevention mechanism further comprises computer readable code devices configured to enable a computer to receive a URL containing an identifying characteristic and effect an email deletion mechanism configured to dispose of said email message having said identifying characteristic.

Clause 29. The computer program product of clause 26 whereby said email deletion mechanism further comprises computer readable code devices to cause said computer to effect an email removal mechanism configured to scan a mailbox to dispose of said email message.

CLAIMS**REPLACED BY
ART 34 AMDT**

1. Apparatus for processing electronic mail, said apparatus comprising:

mail fetching logic for fetching an electronic mail message for a user from a first mail server, said apparatus interacting as a first mail client with said first mail server;

10 mail filtering logic for identifying at least one predetermined characteristic within said electronic mail message that is indicative of said mail message being unwanted by said user so as to identify said electronic mail message as either a wanted electronic mail message or an unwanted electronic mail message;

15 mail storage for storing at least wanted electronic mail messages identified by said mail filtering logic; and

mail delivery logic responsive to a mail delivery request from a second mail client for delivering wanted mail for said user from said mail storage to said second mail client, said apparatus interacting as a second mail server with said second mail client.

20 2. Apparatus as claimed in claim 1, wherein said mail filtering logic identifies a plurality of predetermined characteristics within an electronic mail message to derive a score value associated with said electronic mail message, said electronic mail message being classified as an unwanted electronic mail message by comparing said score value with a threshold score value.

3. Apparatus as claimed in any one of claims 1 or 2, wherein said plurality of predetermined characteristics include one or more of:

(i) said electronic mail message has a sender identifier matching one or more known senders of unwanted electronic mail messages;

30 (ii) said electronic mail message has a subject identifier or message text including text matching one or more known texts indicative of unwanted electronic mail messages;

(iii) said electronic mail message has a header with a format characteristic matching one or more known format characteristics indicative of unwanted electronic mail messages;

(iv) said electronic mail message includes a message identifier matching a message identifier of electronic mail messages sent to other users and held within said mail storage

5. indicating that the same electronic mail message has been sent to multiple users; and
(v) said electronic mail message has a reply address identifier that may be validly used to send a send a reply to said electronic mail message.
4. Apparatus as claimed in any one of claims 2 and 3, wherein said mail filtering logic
10 applies a predetermined weighting to each of said predetermined characteristics to derive said score value.
5. Apparatus as claimed in any one of the preceding claims, wherein unwanted electronic mail messages are also stored within said mail storage.
6. Apparatus as claimed in claim 5, comprising unwanted mail delivery logic responsive to an unwanted mail request from a user for delivering to said user unwanted electronic mail messages held within said mail storage for said user.
- 20 7. Apparatus as claimed in claim 6, wherein said unwanted mail request is an WWW page request from said user and said unwanted electronic mail messages are returned to said user as WWW pages.
8. Apparatus as calimed in any one of claims 6 and 7, wherein said mail filtering logic is responsive to an unwanted mail confirmation signal from a user confirming that an electronic mail message is an unwanted electronic mail message to modify said at least one predetermined characteristic such that other instances of said electronic mail message received by other users are also confirmed as unwanted electronic mail messages.
- 30 9. Apparatus as claimed in any one of the preceding claims, wherein said apparatus is physically remote from at least one of said first mail server and said second mail client.
10. Apparatus as claimed in any one of the preceding claims, wherein exchange of mail messages uses the POP3 protocol.

5

11. Apparatus as claimed in claim 10, wherein said second mail client points to said apparatus as its POP3 mail server.

10

12. Apparatus as claimed in any one of claims 10 and 11, wherein said apparatus points to said first mail server as a POP3 mail server for said user.

15

13. Apparatus as claimed in any one of the preceding claims, wherein said mail fetching logic is triggered to fetch any electronic mail messages for said user from said first mail server by said mail delivery request.

14. Apparatus as claimed in any one of claims 1 to 12, wherein said mail fetching logic is periodically triggered to fetch any electronic mail messages for said user from said first mail server independently of any mail delivery request.

20

15. Apparatus as claimed in claim 5, wherein unwanted mail storage logic operates to delete unwanted electronic mail messages from said mail storage in accordance with predetermined parameters in order to recover storage capacity within said mail storage being used by said unwanted electronic mail messages.

25

16. Apparatus as claimed in any one of the preceding claims, wherein said mail filtering logic uses at least one predetermined characteristic defined by said user.

17. Apparatus as claimed in claim 16, wherein said user defines said at least one predetermined characteristic via a WWW browser.

30

18. Apparatus as claimed in any one of the preceding claims, wherein said mail filtering logic uses at least one predetermined characteristic defined by a system administrator.

- 5 19. A method of processing electronic mail, said method comprising the steps of:
fetching an electronic mail message for a user from a first mail server, said fetching
being performed as if a first mail client is interacting with said first mail server;
identifying at least one predetermined characteristic within said electronic mail
message that is indicative of said mail message being unwanted by said user so as to identify
10 said electronic mail message as either a wanted electronic mail message or an unwanted
electronic mail message;
storing at least wanted electronic mail messages identified by said mail filtering logic;
and
in response to a mail delivery request from a second mail client, delivering wanted mail
for said user from said stored mail to said second mail client, said delivery being performed as if
a second mail server is interacting with said second mail client.
20. Apparatus for performing as an electronic mail message client, said apparatus
comprising:
20 a mail delivery request generator for generating a mail delivery request to a mail server
having the form of the apparatus as claimed in any one of claims 1 to 19.
21. Apparatus as claimed in claim 20, comprising means for generating unwanted mail
confirmation signals to confirm to said apparatus as claimed in any one of claims 1 to 19 that an
electronic mail message is an unwanted electronic mail message.
22. A computer program product on a computer readable memory for controlling a
computer apparatus to process electronic, said computer program product comprising:
mail fetching logic for fetching an electronic mail message for a user from a first mail
30 server, said computer apparatus interacting as a first mail client with said first mail server;
mail filtering logic for identifying at least one predetermined characteristic within said
electronic mail message that is indicative of said mail message being unwanted by said user so
as to identify said electronic mail message as either a wanted electronic mail message or an
unwanted electronic mail message;

5 mail storage logic for controlling storage of at least wanted electronic mail messages
identified by said mail filtering logic; and

mail delivery logic responsive to a mail delivery request from a second mail client for
delivering wanted mail for said user from said stored mail to said second mail client, said
computer apparatus interacting as a second mail server with said second mail client.

10

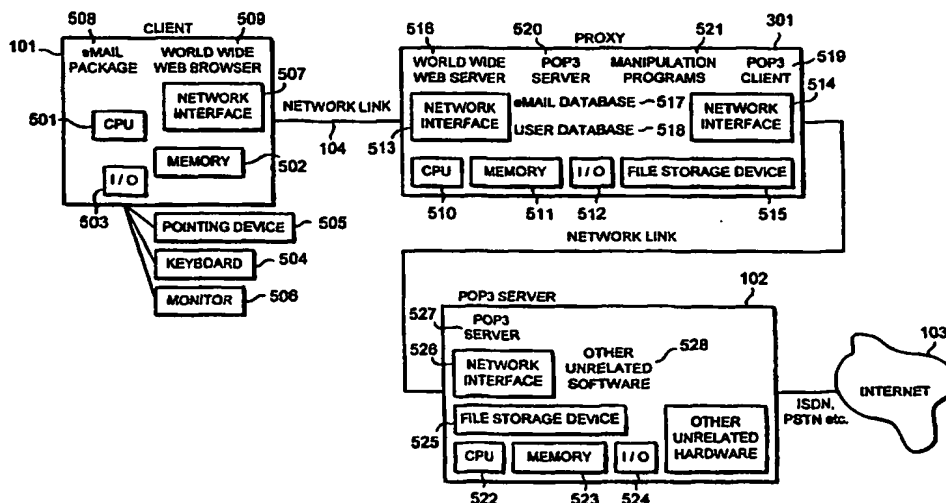
1



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : H04L 12/58		A1	(11) International Publication Number: WO 00/49776
			(43) International Publication Date: 24 August 2000 (24.08.00)
(21) International Application Number: PCT/GB00/00560 (22) International Filing Date: 17 February 2000 (17.02.00) (30) Priority Data: 9903672.5 17 February 1999 (17.02.99) GB (71) Applicant (for all designated States except US): ARGO INTER- ACTIVE LIMITED [GB/GB]; 7 Dukes Court, Chichester, West Sussex PO19 2FX (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): JELBERT, Richard [GB/GB]; 37 Bognor Road, Chichester, West Sussex PO19 2NG (GB). TRIBBECK, Jason, Paul [GB/GB]; 36 Nettlecombe Avenue, Southsea, Portsmouth PO4 0QW (GB). (74) Agent: ROBINSON, Nigel, Alexander, Julian; D Young & Co., 21 New Fetter Lane, London EC4A 1DA (GB).			(81) Designated States: JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the</i> <i>claims and to be republished in the event of the receipt of</i> <i>amendments.</i>

(54) Title: METHOD AND APPARATUS FOR PROXYING AND FILTERING ELECTRONIC MAIL



(57) Abstract

Email messages transmitted from a server via a mail transport protocol over an email network are passed through a proxy host, which is able to locally filter useful email from junk email by utilising a series of "scoring" metrics or by more explicit user configuration (killfiles), before passing the filtered mail on to the client user via the chosen mail transport protocol. The proxy server can produce logs and digests of processed junk email and send them by email or present them via a secure World Wide Web document to a system administrator for inspection, and also, for any message which cannot be conclusively scored as being junk, add it to a second per-user mailbox which can be inspected by the intended recipient at his discretion via a World Wide Web interface. The user can then inform the proxy definitively by World Wide Web fill-out form whether the message is junk or not, and email messages confirmed as being junk can then be removed automatically from all mailboxes held on the proxy.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P006192W0	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 00/ 00560	International filing date (day/month/year) 17/02/2000	(Earliest) Priority Date (day/month/year) 17/02/1999
Applicant ARGO INTERACTIVE LIMITED et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

5

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

Int'l. Application No
PCT/GB 00/00560

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04L12/58

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 06929 A (AT & T CORP) 11 February 1999 (1999-02-11) abstract page 2, line 11 -page 3, line 7 page 4, line 26 - line 29 page 5, line 14 -page 6, line 4 page 9, line 1 - line 5 page 9, line 25 - line 30 figures 2,3	1,3, 10-16, 18-20,22
Y		2,5,17
Y	WO 96 35994 A (COMPUSERVE INC) 14 November 1996 (1996-11-14) abstract page 5, line 7 - line 13 figures 1-4	2

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

19 June 2000

Date of mailing of the international search report

28/06/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Poggio, F

INTERNATIONAL SEARCH REPORT

Int. J. Application No

PCT/GB 00/00560

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PICH J: "PC-BRIEFKASTEN FUER E-MAIL: TIXI-MAIL BOX" CHIP ZEITSCHRIFT FUER MIKROCOMPUTER-TECHNIK, DE, VOGEL VERLAG. WURZBURG, no. 3, 1 March 1998 (1998-03-01), pages 192-194, XP000737954 ISSN: 0170-6632 the whole document	17
A		7
Y	EP 0 420 779 A (IBM) 3 April 1991 (1991-04-03) abstract page 2, column 1, line 35 - column 2, line 31 page 4, column 5, line 24 - line 35	5
A	PALME J ET AL: "Issues when designing filters in messaging systems" COMPUTER COMMUNICATIONS, NL, ELSEVIER SCIENCE PUBLISHERS BV, AMSTERDAM, vol. 19, no. 2, 1 February 1996 (1996-02-01), pages 95-101, XP004032392 ISSN: 0140-3664 paragraph '0002! paragraph '0005!	2,4

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/00560

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9906929 A	11-02-1999	NONE	
WO 9635994 A	14-11-1996	AU 4875799 A	25-11-1999
		AU 706649 B	17-06-1999
		AU 5919496 A	29-11-1996
		CA 2220491 A	14-11-1996
		DE 19681387 T	16-04-1998
		GB 2316588 A, B	25-02-1998
EP 0420779 A	03-04-1991	DE 69025117 D	14-03-1996
		DE 69025117 T	22-08-1996
		JP 3117940 A	20-05-1991